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10/617,975	07/12/2003	David R. Payne	82380-00661	4897
28839	7590	07/25/2006	EXAMINER	
TOMLINSON & O'CONNELL, P.C. TWO LEADERSHIP SQUARE 211 NORTH ROBINSON, SUITE 450 OKLAHOMA CITY, OK 73102			ADDIE, RAYMOND W	
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EXAMINER

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Commissioner for Patents

The Examiner's Answer mailed 9/8/06 has been vacated by order of the USPTO Board of Appeals and Interferences mailed 3/9/2006. A new Examiner's Answer, in response to Appellant's Supplemental Appeal Brief filed 6/7/06. The IDS filed 4/27/2004 has been considered and a signed copy was sent to Appellant 5/5/2006, in compliance with the Order of 3/9/2006



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/617,975
Filing Date: July 12, 2003
Appellant(s): PAYNE ET AL.

MAILED

JUL 25 2006

GROUP 3600

Lawrence Grable
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/7/06 appealing from the Office action mailed 1/21/2005. The Examiner's answer of 9/8/2005 has been vacated, as per the Order Returning Undocketed Appeal to Examiner of 3/9/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect.

The amendment after final rejection filed on 3/14/2005 has not been entered.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,883,015	Hesse et al.	11-1998
6,308,787	Alft	10-2001
5,556,253	Rozendaal et al.	09-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hesse et al. # 5,833,015 in view of Alft # 6,308,787 B1.

Hesse et al., discloses a method for drilling and backreaming a horizontal bore hole, the method comprising:

Automatically rotating and pulling a drill string (3), having a backreamer (5) through the horizontal borehole.

Automatically reducing a rate of pullback if a rotation pressure on the drill string is greater than a predetermined limit.

Automatically reducing the rate of pullback if a rotation speed of the drill string is less than a predetermined limit.

Increasing the rate of pullback if the rotation pressure is less than the predetermined limit, increasing the rotation speed of the drill string is greater than a predetermined limit, and the product tension at the backreamer (24) is less than a predetermined limit.

Attaching a utility line(8) to the backreamer, after the boring tool (26) has exited the earth at location (24). See Hesse et al. Col. 3, ln. 50-col. 5, ln. 23.

What Hesse et al. does not disclose is automatically reducing the length of the drill string. However, Alft teaches a method of operating a horizontal boring machine having an automated drill string (22), which can be lengthened or shortened automatically or manually, by removing a pipe section from the drill string, either automatically or manually. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of forming a bore hole, of Hesse et al., with the method of automatically lengthening or shortening the drill string when the drill string needs to be lengthened or shortened, as taught by Alft et al., in order to maximize boring efficiency. See Alft col. 30, lines 19-65.

In regards to claim 6, Hesse et al. discloses it is desirable to pull a utility line through a borehole, by attaching the utility line (8) to a drill head (5), and to transmit operational data from the bore head to the drilling machine to maximize boring efficiency. What Hesse et al. does not disclose is recording the actual location of the utility line as the utility line is automatically pulled through the borehole via a transmission line disposed within the drill string.

However, Alft discloses it is known to track the position of a drill head (24) in real time, using a sonde-type transmitter and remote control unit that uses a traditional methodology for locating the drill head. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of backreaming a borehole of Hesse et al. with the method of tracking the drill head, as taught by Alft, in order to continuously determine and record the location of the utility line, connected to the drill head. See col. 12, Ins.10-41, col. 16, Ins. 16-29.

In regards to Claims 8-11 although neither Hesse et al., nor Alft explicitly recite reducing the rate of pullback of the drill string by a certain percentage; both Hesse et al., and Alft does disclose that the rate of pull-back can be reduced or terminated based upon whether the rotation speed, rotation pressure(torque) of the drill string, or the product tension (lubricating mud pressure) is above or below a pre-determined level. Hence, it would be obvious that the amount of reduction required could be correlated to a specific percentage of the current rate of pull back of the drill string. See col. 44.

(10) Response to Argument

Appellant argues on page 3 of the Brief "the references relied upon by the Examiner do not enable one skilled in the art to make and use the apparatus or method".

However, no claim to an "apparatus" is presented in the pending claims.

Appellant then argues "The Hesse patent does not disclose how to automatically reduce a length of the drill string, and the Alft patent does not enable one of ordinary skill to do so. Thus a *prima facie* case of obviousness as to claim 4 has not been made and the 103(a) rejection must be overturned.

However, the Examiner does not concur.

None of the claims on appeal require any specific step or methodology in automatically reducing the length of the drill string. The claims are limited to "automatically reducing" if certain circumstances occurs.

Hence, the argument is moot.

Appellant then suggests on Page 3 of the Brief "The make-up operation of connecting the box joint of a pipe section to the pin joint of a similarly constructed drill pipe".

However, none of these structural features or method steps are required by the claims.

Appellant further states "As the drill string is pulled back through the borehole it becomes necessary to remove pipe sections from the drill string...Appellant's method automatically removes a length of drill pipe from the drill string without the need for

operator intervention...Appellant's method also includes the steps of automatically reducing the rate of pullback...and automatically reducing the rate of pullback...each step of Appellants' method is automatic and does not require operator intervention".

To which the Examiner concurs, all steps are automatically performed without operator intervention, but that no specific steps are required nor implied as to how the "automatic" portion of the method steps are performed.

Appellant then argues against the reference to Hesse (et al.) by suggesting "Hesse (et al.) does not teach automatically reducing the length of the drill string, as required by Appellants' claim 4".

To which the Examiner concurs and has stated as being the basis of the 35 U.S.C. 103(a) rejection of the claims as being unpatentable over Hesse et al. '015 in view of Alft '787.

Appellant then suggests on Page 5 of the Brief "Alft does not teach how to automatically reduce the length of a drill string".

However, the Examiner does not concur.

As put forth above none of the claims require the prior art to disclose or teach "how" the automatic reduction of the drill string occurs. The claims only require that the steps be performed automatically. Hence, the argument is moot.

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Appellant then argues Alft does not enable one skilled in the art to automatically reduce a length of the drill string".

To support this allegation Appellant states "Alft states only: A pipe loading controller 141 may be employed to control an automatic rod loader apparatus during rod threading and unthreading operations...the machine controller 74 also controls rotation pump movement when threading a length of pipe onto a drill string 180, as by use of an automatic rod loader apparatus:".

Clearly the unthreading operations are in fact some of the disclosed and necessary steps to reduce the length of the drill string. The fact the pipe loading controller 141 may be employed to control an automatic rod loader apparatus during rod threading and unthreading operations is further evidence the prior art reference to Alft discloses automatically reducing the length of the drill string by use of automated controllers 141 and 74.

Although Appellant accurately quotes Col. 30, Ins. 30-32 and 56-61; what is at issue is the disclosure between lines 33-55, which states "The machine controller 74 also controls a thrust/pullback pump or motor (144)...the machine controller (74) controls the thrust/pullback pump 144 during boring and backreaming operations to moderate the forward and reverse displacement of the boring tool. The thrust/pullback pump 144...drives a hydraulic cylinder 154, or a hydraulic motor, which applies and axially directed force to a length of pipe (180)in either a forward or reverse axial direction. The thrust/pullback pump 144 provides varying levels of controlled force

when thrusting a length of pipe 180 into the ground...and when pulling back on the pipe length (180) when extracting the pipe (180) from the borehole during a back reaming operation. The rotation pump (146)...provides varying levels of controlled rotation to a length of the pipe (180)...for rotating the pipe length (180) when extracting the pipe (180) from the borehole when operating the boring machine in a back reaming mode. Sensors (152) and (162) monitor the pressure of the thrust/pullback pump 144 and rotation pump 146 respectively".

Hence, Appellant's argument that one of skill would not be enabled "to automatically reduce a length of the drill string" is not persuasive in light of the entire teaching of the prior art to Alft. See Col. 30, ln. 19-col. 31, ln. 19. Therefore, the rejection is seen as proper and is maintained.

It must be further noted that Alft, in col. 32, Ins. 57-, which states "The high speed response capability of the machine controller (74) in co-operation with the central processor (72) provides for real-time automatic moderation of the operation of the boring machine under varying loading conditions which provides for optimized boring efficiency...by automatically modifying boring machine operations in response to both subtle and dramatic changes in soil/rock and loading conditions".

Which contradicts Appellant's assertion "the references relied upon by the Examiner do not enable one skilled in the art, to...use the...method".

Alft's incorporation by reference of the rod loader of Rozendaal et al., is irrelevant to the

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claimed method, because the claimed method does not preclude nor require any specific structural features be used to perform the claimed method steps.


It should be further noted that Alft also incorporates by reference US #

5,746,278, which states in the Abstract " The controller monitors the rate at which liquid is pumped through the borehole and automatically adjusts the rate of displacement and/or the liquid flow rate so that sufficient liquid is flowing through the borehole to remove the cuttings and debris generated by the boring tool. Sensors are provided to sense pressure levels in the rotation, displacement, and liquid dispensing pumps and an electronic controller continuously monitors the levels detected by the sensors. When the controller detects a rise in rotation pump pressure above an unacceptable level, the controller disengages the boring tool by reducing the rate of boring tool displacement along the underground path, while maintaining rotation of the boring tool at a pre-selected rate. Such disengagement reduces the load on the rotation pump and allows the pressures to recover to an acceptable level. The controller re-engages the boring tool after detecting that the rotation pump pressure has fallen below a set level".

Which although not relied upon by the Examiner during prosecution, provides further disclosure and evidence of obviousness of the limitations claimed in claims 5-12, which Appellant has not argued separately.

For the reasons stated above, it is believed that the rejections should be sustained.

Respectfully submitted



Raymond Addie
Primary Examiner
Group 3600

July 21, 2006

Conferees
TW
DJ